



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,278	05/06/2005	Abdoel Fazel Rajabali	72998-012600/US	9796
33717 7590 10/06/2008 GREENBERG TRAUIG LLP (L.A.) 2450 COLORADO AVENUE, SUITE 400E INTELLECTUAL PROPERTY DEPARTMENT SANTA MONICA, CA 90404				
EXAMINER				
SOLLENBERGER, STEPHEN J				
ART UNIT		PAPER NUMBER		
4151				
MAIL DATE		DELIVERY MODE		
10/06/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/534,278

Applicant(s)

RAJABALI, ABDOEL FAZIEL

Examiner

STEPHEN SOLLENBERGER

Art Unit

4151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date 1/9/2006.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the Netherlands on 11/6/2002. It is noted, however, that applicant has not filed a certified copy of the priority application as required by 35 U.S.C. 119(b).

Specification

The disclosure is objected to because of the following informalities: The specification does not contain an appropriate section to discuss the drawings.

Appropriate correction is required.

Claim Objections

Claims 4 and 5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 3 is claimed to be part of claims 4 and 5. See MPEP § 608.01(n). Accordingly, the claims 4 and 5 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rajabali (WO 03/011594) in view of Forster et al. (US 5,897,739).

Regarding claim 1, Rajabali teaches a method for the production of a laminate (6) consisting of alternating layers of metal (7) and fibre-reinforced plastic bonding layers (8) ("method for the production of a panel (1) from a laminate that comprises at least two layers of metal(2) and an intermediate layer (3)"; p. 6, Lines 3-4), comprising the following steps: the provision of a forming jig (1) provided with at least one centring pin (4), placing at least two metal layers (7) with a fibre-reinforced plastic bonding layer (8) between them on the forming jig (1), in which layers (7, 8) there is an opening (9) through which the centring pin (4) extends ("providing a mould with at least one recess made beforehand, positioning a pack in the mould in such a way that the hole through the pack is aligned with respect to the recess, fitting the fixing means in the hole and the recess"; p. 6, Lines 25-28), placing an aid (10) on the layers (7, 8) around the centring pin (4) ("placing a gas tight membrane over the mould"; p.7, Line 2), making a hole in the vacuum film and the evacuation medium (12) at the location of the centring pin (4) ("making at least one hole through the pack"; p. 6, Line 21), removing the centring pin (4) via the hole ("removing each fixing means"; p. 6, Line 15), sealing the hole with sealing means (22), placing the forming jig (1) with the layers (7, 8), the capping means (10) and the blanket (11) in an autoclave, activating the bonding layer (8) ("activating the adhesive material"; p. 6, line 12) in the autoclave under the influence of heat and pressure, ("raising the temperature and pressure in the autoclave"; p. 7, Lines 6-7) removing the forming jig (1) with the bonded pack (6) from the autoclave.

Rajabali does not teach the use of a vacuum.

In the same field of endeavor at the time of the invention, Forster et al. teach applying an evacuation medium (12) to the layers (7, 8) around the centring pin (4), applying a vacuum film (13) on top of the layers (7, 8), the centring pin (4) and the aid (10), applying and maintaining a reduced vacuum to the layers (7, 8) between the forming mould and the vacuum film (13) ("The combination of vacuum and external pressure functions to consolidate the composite skins, remove air and volatiles from the resin binder, and apply the necessary compaction pressure to ensure full and uniform adhesion"; Column 1, Lines 49-53) for the benefit of applying a vacuum around the opening to consolidate the article and ensure uniform adhesion.

Thus, it would have been obvious to one skilled in the art at the time of the invention to combine Rajabali with Forster et al. for the benefit of applying a vacuum around the opening to consolidate the article and ensure uniform adhesion.

Regarding claim 2, Rajabali teaches the method according to claim 1, comprising the use of an annular aid (10) ("placing a gas tight membrane over the mould"; p.7, Line 2). Note, the membrane could be considered an annular aid.

Regarding claim 3, Rajabali teaches the method according to claim 1 or 2, wherein the centring pin (4) and the aid (10) have less clearance than the centring pin (4) and the hole (9) through the layers (7, 8) ("placing a gas tight membrane over the mould"; p.7, Line 2). Note, it is inherent that the aid would have to have less clearance in order to form a proper seal.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (US 5,897,739).

Regarding claim 1, Forster et al. teach a method for the production of a laminate consisting of alternating layers of metal ("matched metal molding may be used to form and cure the composite panel"; Column 4, Lines 32-33) and fibre-reinforced plastic bonding layers ("The precured composite skin 20 is comprised of fiber reinforced resin matrix composite laminates having a fiber reinforcement"; Column 4, lines 23-25), comprising the following steps: the provision of a forming jig provided with at least one pin ("the pins 120 are caused to engage a peripheral portion 130 of the upper composite skin 126, i.e., pierce the composite fabric, to prevent lateral displacement thereof during the molding/compaction process"; Column 2, Lines 36-39), placing at least two layers with a fibre-reinforced plastic bonding layer between them on the forming jig, in which layers there is an opening through which the pin extends, placing an aid on the layers around the pin ("a protective elastomer strip 139 over the protruding pins 120 to prevent damage to the vacuum bag 138"; Column 2, Lines 53-54), applying an evacuation medium to the layers around the pin, applying a vacuum film on top of the layers the pin and the aid, applying and maintaining a reduced vacuum to the layers between the forming mould and the vacuum film ("the vacuum bag 138 must be sealed outboard of the protruding pins 120, thus requiring the additional step of disposing a protective elastomer strip 139 over the protruding pins 120 to prevent damage to the vacuum bag 138"; Column 2, Lines 51-54), placing the forming jig with the layers the capping means and the blanket in an autoclave, activating the bonding layer in the autoclave under the influence of heat and pressure ("The vacuum bag molding assembly 16 is then placed in an autoclave oven (not

shown) wherein the composite lay-up 10 is exposed to additional pressure and temperature for curing"; Column 5, Lines 56-59), removing the forming jig with the bonded pack from the autoclave. Note, see also Fig. 2a and 2b of Forster et al. show two ways of holding the composite together.

The reference does not set forth a centring pin, metal layers, or making a hole in the vacuum film and the evacuation medium at the location of the centring pin, removing the centring pin via the hole, sealing the hole with sealing means.

Note that centring pins are well known and are an equivalent alternative to the pins shown, and would have been obvious to include for holding the laminate assembly together firmly. With respect to metal layers, note that other conventional materials are shown in the reference, and to so include any conventional material, including metal layers, would have been obvious as such materials are alternative and would function equivalently, absent a showing to the contrary.

With respect to removing the pin and sealing the hole, note that it would have been obvious to one skilled in the art at the time of the invention that without the pins of Fig. 2a, a seal will form and be necessary around the apertures ("While this technique is suitable for high tolerance applications, e.g., LO applications, the protruding pins 120 are a source of high maintenance, i.e., requiring periodic cleaning and repair, pose a hazard to the operator, and create difficulties when sealing the vacuum bag 138 to the rigid mold member 122. Regarding the latter, the vacuum bag 138 must be sealed outboard of the protruding pins 120, thus requiring the additional step of disposing a protective elastomer strip 139 over the protruding pins 120 to prevent damage to the

vacuum bag 138"; Column 2, Lines 45-50) and ("A similar approach is shown in FIG. 2b wherein a perforated or apertured metal strip 140 is substituted for the protruding pins 120. The peripheral portion 130 of the upper composite skin 126 is laid over the apertured metal strip 140 such that under compacting pressure the apertures 142 thereof capture or grip the peripheral portion 130 to prevent lateral displacement of the upper composite skin 126"; Column 2, Lines 55-61).

Thus, it would have been obvious to one skilled in the art at the time of the invention that without the pin of Fig 2a, a seal would be needed around the aperture and formed in the presence of a vacuum.

Regarding claim 2, Forster et al. teach the method comprising the use of an annular aid ("a protective elastomer strip 139 over the protruding pins 120 to prevent damage to the vacuum bag 138"; Column 2, Lines 53-54). Note, the protective elastomer strip is equivalent to an annular aid.

Regarding claim 3, Forster et al. teach the method according to claim 1 or 2, wherein the pin and the aid have less clearance than the pin and the hole through the layers ("a protective elastomer strip 139 over the protruding pins 120 to prevent damage to the vacuum bag 138"; Column 2, Lines 53-54). Note, it is implicit that the aid (seal) would have to have less clearance in order to form a proper seal.

Thus, it would have been obvious to one skilled in the art at the time of the invention to include the elastomer strip of Forster et al. as a type of annular aid, and to perform the sealing as claimed for the benefit of forming a proper seal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN SOLLENBERGER whose telephone number is (571) 270-1922. The examiner can normally be reached from 9 am to 5 pm ET, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Ortiz can be reached at (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.J.S.

/Angela Ortiz/

Supervisory Patent Examiner, Art Unit 4151